

Appendix 6-A

Symbols and Acronyms

Chapter 6

Symbols

<u>Symbol</u>	<u>Definitions</u>	<u>Units</u>
A_c	Flow area of approach cross section obstructed by embankment	sf
a	Pier width	feet
a'	Length of abutment projected normal to flow	feet
b	Bridge opening	feet
D_m	Effective mean diameter of bed material	feet
D_{50}	Median diameter of bed material	feet
Fr	Froude number	-
g	Acceleration of gravity	ft./s ²
h_l	Backwater	feet
K_1	Correction factor for pier nose shape (Section 10.4.5.3.2)	-
K_1	Coefficient for abutment shape (Section 10.4.5.3.3)	-
K_1	Bed material transport exponent (Section 10.4.5.3.1)	-
K_2	Correction factor for angle of attach (Section 10.4.5.3.2)	-
K_3	Correction factor for bed condition (Section 10.4.5.3.2)	-
K_4	Correction factor for armoring by bed material size	-
L	Length of pier	feet
n	Manning's roughness coefficient	-
NWS	Normal water surface	feet
OHW	Ordinary high water mark	-
ρ	Density of water	Slugs/ft. ³
Q	Flow	cfs
Q_e	Flow obstructed by abutment and approach embankment	cfs
S_o	Channel slope	feet/foot
S_1	Slope of energy grade line	feet/foot

V	Velocity	fps
V_e	Velocity of flow obstructed by abutment and approach embankment	fps
V^*	Shear velocity	fps
W	Bottom width of bridge	feet
w	Fall velocity of bed material	fps
WS	Water surface	-
y_a	Average depth of flow on floodplain	feet
y_c	Critical depth	feet
y_i	Depth of water	feet
y_n	Normal depth	feet
y_s	Depth of scour	feet
y_o	Existing depth in contracted channel before scour	feet

Acronyms

AASHTO	American Association of State Highway Transportation Officials
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIS	Flood Insurance Study
LWMD	Land and Water Management Division of MDEQ
MDEQ	Michigan Department of Environmental Quality
MDOT	Michigan Department of Transportation
NBIS	National Bridge Inventory System
NFIP	National Flood Insurance Program
USACE	United States Army Corps of Engineers
U.S. EPA	United States Environmental Protection Agency
USGS	United States Geological Survey